



Radio Topics

Single Tube Reflex Receiver

(Part One)  
By R. M. SHERRILL  
(Radio Engineer)

There are numerous reasons why the reflex type receiving sets have recently attained such a great popularity. For the same signal strength fewer tubes are needed. When fewer tubes are used, less space is needed, thus making the circuit ideal for portable sets. Furthermore the operation is simplified by having but one or two tuning controls.

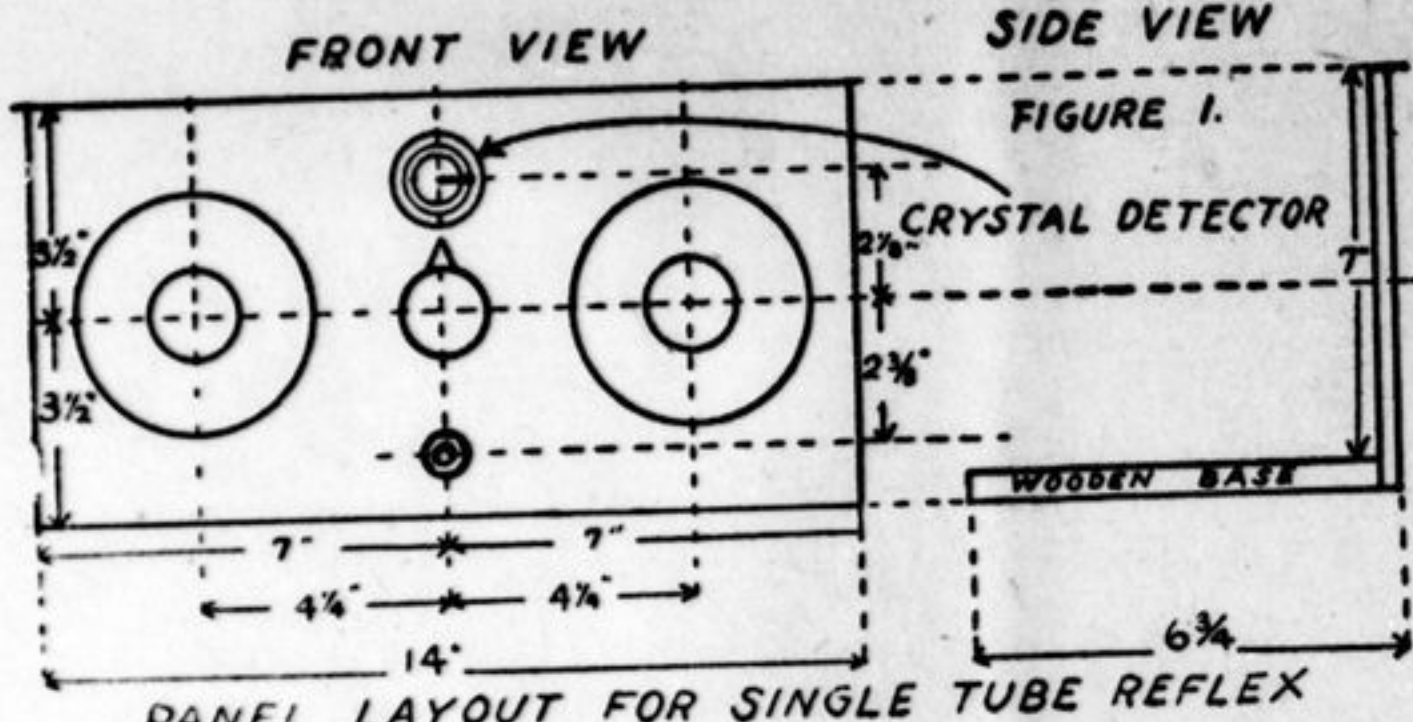
Some of the reflex sets are very complex, however, and the construction and assembling of such a set is likely to require more patience and skill than the average experimenter possesses. However, if the directions are closely followed, a good single tube reflex set may be built without undue difficulty.

A crystal is used as the detector. The tube plays the double role of amplifying the signals before they are "detected" and of again amplifying them after detection. Such a receiver is very sensitive to weak

signals, and when a suitable tube is used, it will give ample volume for loudspeaker reception on local stations.

The main pieces of apparatus needed are given in the following list:  
2-23 plate variable condensers.  
2-Dials.  
1-Crystal detector.  
1-Rheostat.  
1-Socket.  
1-Audio-frequency amplifying transformer.  
1-Jack and plug.  
1-C battery (Flash light battery.)

Depends On Tube  
To be successful the whole receiver should be built around the particular tube that is to be used. Practically any good amplifier tube is suitable. As in any other re-



of adjustment by a slight jar. The rheostat should be chosen to suit the type of tube to be used. A single circuit jack is used, and in case it is desired to add an A. F. amplifier, the leads to the input of the amplifier may be plugged in place of the head phones.

The work of assembling the apparatus behind the panel is made easier by screwing a false bottom on to the panel. (See side view in Fig. 1). The coils, socket, transformers, etc., are mounted on this bottom, and when completed, the whole unit is inserted in the cabinet. A slot in the rear of the cabinet will allow the binding posts to project out.

Part Two, giving the circuit diagram and constructional details, will conclude the description of the Reflex set—See next week's paper.

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RADIO QUESTIONS AND ANSWERS

Mr. Sherrill will be glad to help you solve your radio problems. Write him, care of The Durham Chronicle.

E. R. K. gives a list of his apparatus used, and "wants to know if it is suitable for a Reinartz tuner?"

Ans.—Your material is O.K., but you might add a variable grid leak. Be sure to follow closely the circuit instructions accompanying your UV199.

D. B. S. asks: "What kind of a solution is used in the Edison Storage cell?"

Ans.—The electrolyte used is

about a 20 per cent solution of Potassium Hydroxide.

C. B. inquires: "Is there any advantage to be gained by using a voltmeter in a receiving set?"

Ans.—If the set has been calibrated, the calibration would be more accurate if the filaments are always kept at the same voltage. In addition the life of the tubes would be prolonged by operating them at the normal voltage or less.

FILM TELLS TALE OF "SOUTH SEA LOVE"

Sometimes Dan Cupid becomes prosaic. He gets into a rut and wanders along the way of life, causing merely a host of commonplace love affairs and marriages, succeeded by commonplace children and ordinary homes. But he never works that way in the tropics. Down there he becomes a beach comber, or a king traveling incognito, and romance comes in his wake. The loves he inspires burn furiously. A crimson moon over an indigo sea is something different than a cold, white moon above the drab house-tops of a grimy city.

So it was that Frederick and Fanny Hatton, seeking to write a romance for the screen, chose the tropics for their setting and then called produced the picture which comes to the Veterans' Star Theatre December 4 and 5. Shirley Mason has the role of the tropical girl in love, unhappily, with a man from the north. There are scorching passions, cold treachery, alluring beauty, mingling with scented romance, subtle humor and touching pathos in the story.

Besides the regular film production, the Clyde Cook Comedy, "Wet and Weary," is also being shown.

The happiest people are those who are young enough to think the back seat was made to hold six.

SOUTHAMPTON FEARS HUGE OIL SWINDLE

Oil Refinery Promoters Have Been Missing Since November 20.

A number of residents of Southampton are harboring a suspicion that they have been the victims of a clever oil swindle worked by the promoters of a so-called American Oil Company who were believed to have commenced the erection of a big refinery in Southampton. A site had been purchased, and a gang of men engaged to clear it up while the directors of the company were busy selling oil shares in town and vicinity.

The promoters departed from town on Thursday, November 20, and were to return the following Monday, but up till last night, they have not showed up.

The shareholders, workmen and hotels have begun to suspect that they have been victimized by a gang of oil sharks, and their suspicions are being strengthened by the fact that the officials of the so-called company are reported to have left town without settling for hotel accommodation or paying their workmen. A present the whole affair looks like the biggest oil swindle that was ever put across in Bruce.

Another way to get your husband in early is to tell him supper is late because you were out to target practice.

SPONTANEOUS COMBUSTION A FACT, NOT FANCY

Warwick Township Barn, Recently Burned, Seen to Break into Flames.—Other Interesting Data Gathered from Experience of Years Gone By

On several previous occasions The Chronicle has dealt in its columns with the question of spontaneous combustion as it affects farm barns, and while we are fully convinced that the majority of farm fires originate in this manner, it is sometimes hard to convince those most interested that there is anything in it.

It is with this object in view that we publish this week the following from The Forest Free Press of last week. While there are not likely to be many here acquainted with any of the people mentioned, we give the whole article in the general interest of all who store hay and grain. It says:

"On Saturday last, Mr. C. H. Cowan of Toronto, deputy Fire Marshall of Ontario, was in Forest and went out to the home of Mr. George Dailey, on the 6th Concession of Warwick, and made a thorough investigation into the cause of the fire that occurred on Wednesday night of last week and destroyed his fine barn, together with the crop and stock.

"At the request of this paper, Mr. Cowan has given us a copy of his report, which we give here for the benefit of our readers as follows:

"The fire occurred at about 5:30 p.m. and had its origin in west hay and corn mow of the barn. To the close neighbors, the fire as it ate its way out through the west end of the barn was taken by some to be the moon, by others to be a dim, distant headlight of a car on the road. A moment or two later the whole upper portion of the barn was a mass of fire. Other parties who passed by and called at the Dailey home on a message, saw not the least light, only two minutes before the barn was found by the Daileys to be on fire.

"A favorite horse and two other animals were saved by Mr. Dailey who by this rash act had a close call.

"The total loss by the fire was \$10,000 with a net loss of \$6,500.

"The mow, where the fire originated, contained some 42 tons of sweet clover, red clover and alsike clover, mixed. A quantity of oats and barley were threshed off this mow on November 12. On the following day, two tons of straw were placed on this mow, and immediately following about eight tons of corn stalks were drawn in out of the field and placed on the flat with slings.

"Mr. Dailey, when he entered the horse stable, found only a dense smoke, and his horses frantic. His cow stable and hog pen in the opposite end of basement were full of fire, and the animals silent.

"Mr. Dailey and his man left the barn at 4:30 and 5:00 p.m. Neither man had entered the upper portion of the barn.

"Mr. Dailey, a most careful man, never smokes or lights a light at his barn, nor does he allow others to do so.

"He had put his corn in on the flat this year for the first time because his neighbors were all doing so. Corn produce in any shape or form is one of the hardest to cure, and one of the most dangerous when placed in the barn.

"On December 12, 1923, the barns of George Wilson, on the 2nd Concession, Mosa Township, County of Middlesex, were burned by corn stalks, hauled in out of the stook and piled on the floor in a heap.

"Shelled corn, unless kiln-dried, will fire a flour mill, unless kept moved and turned. Several mills have been burned this way.

"On November 12, 1924, the fine barns of Ray Lidster, London Township, were totally destroyed by his straw mow taking fire at 5 o'clock p.m. This mow contained about 25 tons of straw which was stook threshed into-mow in July. Wheat sheaves had red top grass, clover and other green stuff in butts of sheaves, and some of these were tough and damp. Three heavy leaks in the roof were discovered this straw mow. No person had been up in this building for a day or more. Fire broke directly out of the top of the roof and west end of the barn. There was indisputable proof of spontaneous combustion, and Mr. Lidster and near neighbors who first saw the fire were convinced that the mow fired the barn by self-ignition.

"Many farmers still doubt that spontaneous combustion exists, and refuse to believe that their barns can burn that way.

"This is the case with nearly every farmer who loses his buildings, but this costly experience convinces most of them.

"Until farmers heed the warning that is given them and are more particular about the curing and sav-

ing of their produce, and condition of their roofs, those mysterious and deplorable losses of fine barns and valuable live stock will continue. With the large barns and heavy clovers and mixed grasses of this age, farmers produce is absolutely safe only when it has been cocked up; stooked up, sweated, cured and dried thoroughly before hauling into the barn. Hay should be thoroughly levelled every load. It is safer still when salted a pail full to the load.

"Mr. Dailey was a believer in spontaneous combustion, but he had not thought his corn could fire his barn.

"Evidence obtained, the hour of the fire, the location of the fire, and its sudden outburst that enveloped the whole upper structure of the barn, leave no room, for thief, tramp, pipe, match, cigarette or enemy.

"On several occasions, eye witnesses have seen fire-hot gas burn a hole suddenly through side, bottom, or roof of a mow, a moment before ignition through the outer air caused a sudden burst of flame as was seen in the Dailey fire, making it an undeniably case of spontaneous combustion.

"Mr. Dailey, wife and family are convinced, so also are his close neighbors who saw the fire in its initial stages.

"These fires, when once generated in the center of a large mow, can and do carry on for 6, 8, and 10 months before firing the mow.

"Spontaneous combustion was known of in the reign of George III, in England.

"The Walkerton Farmers' Central Insurance Company has on its files an undisputable case of 40 years ago. This mow of hay smoked and steamed for days and became fire-hot. While neighbors worked to remove the produce, the mow took suddenly fire when contents were half removed, and the barn and contents were lost.

"Over 1000 barns are destroyed in Ontario each year, entailing a tremendous loss. Many of these are spontaneous combustion. Is it wise in the face of these facts to ignore the warning given and to neglect to take the precaution of curing farm produce thoroughly before entering the barn?"

"This is the question the farmer should ask himself. To wait till your barn burns to convince you is too costly an experience.

"Owing to the remarkable evidence obtained in this investigation from eye witnesses, and the fact that it was a daylight fire, this article is written with the hope that it will convince this community and cause the farmers to give the co-operation which they must give in order to cut down the fire waste of the province and also their own individual fire loss."

IN MEMORIAM

Laybourn.—In loving memory of Aldrich Richard Gray Laybourn, who departed this life November 24, 1923.

Day after day, we think what he is doing,  
In those bright realms of air,  
Year after year his tender steps pursuing  
Behold him, grown more fair.

Thus do we walk with him and keep unbroken,  
The bond which nature gives,  
Thinking that our remembrance tho' unspoken,

May reach him where he lives,  
Sadly missed by father, mother,  
brothers and sister.  
Tugaske, Sask.

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